

-37-

**SYSTEM AND METHOD FOR  
BI-VENTRICULAR FUSION PACING**

**ABSTRACT OF THE DISCLOSURE**

5           Bi-ventricular cardiac pacing systems and systems for improving  
cardiac function for heart failure patients that pace and sense in right and left  
ventricles of the heart and particularly pace in one of the right and left  
ventricles after an AV delay timed from a preceding atrial event and after a  
spontaneous depolarization in the other of the right and left ventricles to  
10           achieve fusion pacing. An A-RVp delay and an A-LVp delay are each  
determined from an intrinsic sensed A-RVs delay and an intrinsic A-LVs  
delay. If the derived A-LVp delay becomes substantially equal to or shorter  
than the intrinsic A-RVs delay, then the A-RVp delay is decremented to be  
shorter than the A-LVp delay. Bi-ventricular pacing of the RV and LV is then  
15           established closely timed to the intrinsic RV and LV depolarizations.